APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,447	12/03/2001	David M. Horowitz	650-A01-001	9566

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EXAMINER
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ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
10/005,447</td><td>Applicant(s)
HOROWITZ ET AL.</td></tr>
<tr><td>Examiner
Brian L. Albertalli</td><td>Art Unit
2655</td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 December 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-32</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-32</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 10 includes the limitation that a title may be an album title. There is no mention of indexing album titles in the specification.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   Claims 15-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 15-25 are drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a

data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

In this case, a "machine-readable medium" is defined in the specification (page 27, lines 7-9) as "media that transmits a carrier wave or other signal". While the "media" that transmits the carrier wave or signal may be statutory (if the media is a tangible, physical media), the "carrier wave or other signal" embodying the program is not. A carrier wave or signal embodying program is not a tangible, physical "thing" and thus is not statutory. Since the definition of "machine-readable medium" as given in the specification is not clear as to whether the "machine-readable medium" is statutory subject matter, the following amendment to the preambles of claims 15-25 is suggested:

--A tangible machine-readable medium encoded with a program...--

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1, 5-10, 15, 19-21, 26, and 28-30 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Ramshaw et al. (*Text Chunking using Transformation Based*

Learning), in view of the Applicant's admitted prior art.

In regard to claims 1, 15, and 26, Ramshaw et al. disclose a method, machine

readable medium, and system for generating phrase chunking rules for records in a

database, comprising:

part-of-speech tagging each record in a first set of records (Fig. 1, a training

corpus is part-of-speech tagged to create a baseline system, page 86, section 3, 2nd

paragraph, lines 1-2; and pages 87-88, section 4.2);

creating a plurality of phrase chunking rules based on patterns of part-of-speech

tags in the tagged record (rule templates, page 86, section 3, 2nd paragraph, lines 2-5;

and page 88, section 4.3);

applying the phrase chunking rules to the records in a second set of records so

as to generate indexes for the records in the second set of records (rules are applied on

the current corpus, page 86, section 3, 3rd paragraph; Tables 3 and 4 give results of the

application of baseline rules to a second set of records, see page 90, section 6; the

"chunking" of records is used for indexing, page 82, section 1, lines 5-6).

While Ramshaw et al. suggest that phrase chunking is useful for creating index

terms for records in a database (page 82, section 1, lines 5-6 and page 93, section 8,

lines 4-7), Ramshaw et al. do not specifically disclose that the titles of records are

chunked and indexed.

The Applicant's admitted prior art discloses indexing a set of titles (movie titles,

page 2, 2nd paragraph).

It would have been obvious to one of ordinary skill in the art at the time of

invention to apply the teachings of Ramshaw et al. of phrase chunking for index term

creation to a set of record titles, so the records could be subsequently searched.

In regard to claims 5, 19, and 28, Ramshaw et al. disclose in the part-of-speech

tagging step, words of each record in the first set of records are assigned part-of-

speech tags, and the part-of-speech tags include descriptiveness attribute tags (items

tagged P are irrelevant to chunk boundaries, page 87, section 4.1, 3rd paragraph, lines

5-7).

As discussed above in reference to claims 1 and 15, while Ramshaw et al. do not

specifically disclose that titles of records are index, applying the teachings of Ramshaw

et al. of phrase chunking for index term creation to a set of record titles would have

been obvious to one of ordinary skill in the art at the time of invention, for the reasons

given above.

In regard to claims 6 and 29, Ramshaw et al. discloses the first set of records is a

subset of the second set of records (derived from the Penn Treebank corpus, page 82,

section 1, 3rd paragraph).

In regard to claim 7, Ramshaw et al. disclose the second set of records includes

all of the records in the database, and

the first set of records includes at least one record that is not in the database (in

the general transformation based paradigm, the training corpus is distinct from the

current corpus, see Fig. 1, page 86).

In regard to claims 8 and 20, Ramshaw et al. disclose the creating step includes

the sub-step of creating at least one of the phrase chunking rules based on human

factors analysis (the Penn Treebank corpus is a corpus of Wall Street Journal articles

written by humans, thus the creation of rules is based on "human factors analysis", page

82, section 1, lines 5-6).

In regard to claims 9, 21, and 30, Ramshaw et al. disclose the phrase chunking

rules include at least one of context sensitive phrase chunking rules and statistical

phrase chunking rules (rules are learned based on neighboring words, page 83, lines 3-

4 and page 88, section 4.3).

In regard to claim 10, while Ramshaw et al. suggest that phrase chunking is useful for creating index terms for records in a database (page 82, section 1, lines 5-6 and page 93, section 8, lines 4-7), Ramshaw et al. do not specifically disclose that the titles of records are chunked and indexed where each title is one of a product name, a part name, a movie title, a show title, and an album title.

The Applicant's admitted prior art discloses indexing a set of movie titles (page 2, 2nd paragraph).

It would have been obvious to one of ordinary skill in the art at the time of invention to apply the teachings of Ramshaw et al. of phrase chunking for index term creation to a set of movie titles, so the movie records could be subsequently searched.

7.   Claims 2-4, 16-18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramshaw et al., in view of Applicant's admitted prior art, and further in view of Lu et al. (U.S. Patent 5,819,260).

In regard to claims 2, 3, 16, 17, and 27, Ramshaw et al. disclose modifying phrase chunking rules by repeating the applying step and the modifying step (this is the basis of the transformation based learning paradigm; the learning process of modifying and applying rules is iterated until an acceptable rule sequence is formed, see Fig. 1 and page 86, section 3; furthermore, the iterations are halted at a predetermined threshold of 500 rules, page 90, section 6, lines 5-7).

Ramshaw et al. and the Applicant's admitted prior art do not disclose that the threshold is a coverage of records threshold.

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Lu et al. disclose a method of phrase chunking for producing an index of records that uses a coverage threshold to determine if a proposed phrase chunk is acceptable (chunks that occur at least twice, column 9, lines 8-25).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Ramshaw et al. and the Applicant's admitted prior art to reiterate the applying step and modifying step until a predetermined coverage threshold was reached, in order to ensure most of the records would be indexed, and thus able to be subsequently searched.

In regard to claims 4 and 18, Ramshaw et al. and the Applicant's admitted prior art do not disclose generating third set of records in the second set of records that were not covered by phrase chunking rules.

Lu et al. disclose generating third set of records in the second set of records that were not covered by phrase chunking rules (chunks not fitting the predetermined criteria are stored for further processing, column 9, lines 23-25).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Ramshaw et al. and the Applicant's admitted prior art to generate a third set of records so the records that were not covered by phrase chunking rules could be further processed, as taught by Lu et al. (column 9, lines 23-25).

8.   Claims 11, 12, 14, 22, 23, 25, and 31 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Ramshaw et al., in view of Applicant's admitted prior art, and

further in view of Official Notice.

In regard to claims 11 and 22, Ramshaw et al. disclose a method and machine

readable medium for performing the steps of: applying a plurality of phrase chunking

rules records in the database so as to generate indexes for the records in the database

(rules are applied on the current corpus, page 86, section 3, 3rd paragraph; Tables 3

and 4 give results of the application of baseline rules to a second set of records, see

page 90, section 6; the "chunking" of records is used for indexing, page 82, section 1,

lines 5-6).

While Ramshaw et al. suggest that phrase chunking is useful for creating index

terms for records in a database (page 82, section 1, lines 5-6 and page 93, section 8,

lines 4-7), Ramshaw et al. do not specifically disclose that the titles of records are

chunked and indexed.

The Applicant's admitted prior art discloses indexing a set of titles (movie titles,

page 2, 2nd paragraph).

It would have been obvious to one of ordinary skill in the art at the time of

invention to apply the teachings of Ramshaw et al. of phrase chunking for index term

creation to a set of record titles, so the records could be subsequently searched.

Furthermore, while Ramshaw et al. and the Applicant's admitted prior art

suggests applying phrase chunking rules to titles of records so as to generate indexes

for the records in the database (which would indicate that the records would be

subsequently searched), Ramshaw et al. and the Applicant's admitted prior art do not specifically disclose the steps of searching.

Official notice is taken that it is notoriously well known in the art that records are indexed in order to subsequently search the records, and that the steps of searching comprise:

receiving a request for one of the records in the database, the request including at least part of the title of one of the records in the database;

comparing the at least part of the title that is received with the indexes that were generated; and

if the at least part of the title that is received matches one of the indexes, retrieving the record corresponding to the one index.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Ramshaw et al. and the Applicant's admitted prior art to include the ability to receive a request including part of a title, search the indexes for that part of the title, and retrieve the corresponding record, since the indexes are necessarily created for sets of records so that the records can be subsequently searched.

In regard to claims 12 and 23, Ramshaw et al. disclose part-of-speech tagging each record in a first set of records (Fig. 1, a training corpus is part-of-speech tagged to create a baseline system, page 86, section 3, 2nd paragraph, lines 1-2; and pages 87-88, section 4.2);

creating a plurality of phrase chunking rules based on patterns of part-of-speech

tags in the tagged record (rule templates, page 86, section 3, 2nd paragraph, lines 2-5;

and page 88, section 4.3).

In regard to claims 14 and 25, Ramshaw et al. disclose the first set of records

includes at least one record that is not in the database (in the general transformation

based paradigm, the training corpus is distinct from the current corpus, see Fig. 1, page

86).

In regard to claim 31, Ramshaw et al. and the Applicant's admitted prior art

suggests applying phrase chunking rules to titles of records so as to generate indexes

for the records in the database (which would indicate that the records would be

subsequently searched), but Ramshaw et al. and the Applicant's admitted prior art do

not specifically disclose the steps of searching.

Official notice is taken that it is notoriously well known in the art that records are

indexed in order to subsequently search the records, an apparatus to perform a search

comprises:

an interface for receiving a request for one of the records in the database, the

request including at least part of the title of one of the records in the database;

second means for comparing the at least part of the title that is received with the

indexes that were generated; and

third means for retrieving the record corresponding to the one index if the at least

part of the title that is received matches one of the indexes.

It would have been obvious to one of ordinary skill in the art at the time of

invention to further modify the combination of Ramshaw et al. and the Applicant's

admitted prior art to include the ability to receive a request including part of a title,

search the indexes for that part of the title, and retrieve the corresponding record, since

the indexes are necessarily created for sets of records so that the records can be

subsequently searched.

9.   Claims 13, 24, and 32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over unpatentable over Ramshaw et al., in view of Applicant's admitted

prior art, in further in view of Official Notice, and further in view of Lu et al.

Ramshaw et al. disclose modifying phrase chunking rules by repeating the

applying step and the modifying step (this is the basis of the transformation based

learning paradigm; the learning process of modifying and applying rules is iterated until

an acceptable rule sequence is formed, see Fig. 1 and page 86, section 3; furthermore,

the iterations are halted at a predetermined threshold of 500 rules, page 90, section 6,

lines 5-7).

Ramshaw et al., the Applicant's admitted prior art, and Official Notice do not

disclose that the threshold is a coverage of records threshold.

Lu et al. disclose a method of phrase chunking for producing an index of records

that uses a coverage threshold to determine if a proposed phrase chunk is acceptable

(chunks that occur at least twice, column 9, lines 8-25).

It would have been obvious to one of ordinary skill in the art at the time of

invention to further modify the combination of Ramshaw et al. and the Applicant's

admitted prior art to reiterate the applying step and modifying step until a predetermined

coverage threshold was reached, in order to ensure most of the records would be

indexed, and thus able to be subsequently searched.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Kuga et al. (U.S. Patent 5,276,616), Carus et al. (U.S. Patent

5,680,628), Liddy et al. (U.S. Patent 5,963,940), and Julliard (U.S. Patent 6,202,064)

disclose systems that index phrases by performing part-of-speech analysis. Bhandari et

al. (U.S. Patent 5,895,464) disclose a system that part-of-speech tags captions of

multimedia objects for indexing.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Brian L. Albertalli whose telephone number is (571) 272-

7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every

second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

BLA 10/5/05

W. R. YOUNG
PRIMARY EXAMINER